

Docket No.: 3462.1010-000

Title: NOVEL GALACTOSYLTRANSFERASES...

Inventors: Hisashi Narimatsu, *et al.*

10/509785

	AGAACAGCCTGGTCAGGAGCGTAACGGAGTGGTGCGCCAACGTG	-61
-60	AGAGGAAACCCGTGCGCGCTGCGCTTTCCTGTCCCCAAGCCGTCTAGACGCGGGAAAA	-1
	▲	
1	ATGCTTTCTGAAAGCAGCTCCTTTTTGAAGGGTGTGATGCTTGAAGCATTTCCTGTGCT	60
	M L S E S S S F L K G V M L G S I F C A	
61	TTGATCACTATGCTAGGACACATTAGGATTGGTCATGGAAATAGAATGCACCACCATGAG	120
	L I T M L G H I R I G H G N R M H H H E	
121	CATCATCACCTACAAGCTCCTAACAAAGAAGATATCTTGAAAATTCAGAGGATGAGCGC	180
	H H H L Q A P N K E D I L K I S E D E R	
181	ATGGAGCTCAGTAAGAGCTTTCGAGTATACTGTATTATCCTTGTAACCCAAAGATGTG	240
	M E L S K S F R V Y C I I L V K P K D V	
241	AGTCTTTGGGCTGCAGTAAAGGAGACTTGGACCAAACACTGTGACAAAGCAGAGTTCTTC	300
	S L W A A V K E T W T K H C D K A E F F	
301	AGTTCTGAAAATGTTAAAGTGTGTTGAGTCAATTAATATGGACACAAATGACATGTGGTTA	360
	S S E N V K V F E S I N M D T N D M W L	
361	ATGATGAGAAAAGCTTACAAATACGCCTTTGATAAGTATAGAGACCAATACAACCTGGTTC	420
	M M R K A Y K Y A F D K Y R D Q Y N W F	
421	TTCCTTGCACGCCCCACTACGTTTGCTATCATTGAAAACCTAAAGTATTTTTTGTAAAA	480
	F L A R P T T F A I I E N L K Y F L L K	
481	AAGGATCCATCACAGCCTTCTATCTAGGCCACACTATAAAATCTGGAGACCTTGAATAT	540
	K D P S Q P F Y L G H T I K S G D L E Y	
541	GTGGGTATGGAAGGAGGAATTGTCTTAAGTGTAGAATCAATGAAAAGACTTAACAGCCTT	600
	V G M E G G I V L S V E S M K R L N S L	
601	CTCAATATCCCAGAAAAGTGTCTGAACAGGGAGGGATGATTTGGAAGATATCTGAAGAT	660
	L N I P E K C P E Q G G M I W K I S E D	
661	AAACAGCTAGCAGTTTGCCTGAAATATGCTGGAGTATTGCGAGAAAATGCAGAAGATGCT	720
	K Q L A V C L K Y A G V F A E N A E D A	
721	GATGGAAGAGATGATTTAATACCAAATCTGTTGGGCTTCTATTAAAGAGGCAATGACT	780
	D G K D V F N T K S V G L S I K E A M T	
781	TATCACCCCAACCAGGTAGTAGAAGGCTGTTGTTTCAGATATGGCTGTTACTTTTAATGGA	840
	Y H P N Q V V E G C C S D M A V T F N G	
841	CTGACTCCAAATCAGATGCATGTGATGATGATGATGGGGTATACCGCCTTAGGGCATTGGG	900
	L T P N Q M H V M M Y G V Y R L R A F G	
901	CATATTTTCAATGATGCATTGGTTTCTTACCTCCAAATGGTTCTGACAATGACTGAGAA	960
	H I F N D A L V F L P P N G S D N D *	
961	GTGGTAGAAAAGCGTGAATATGATCTTTGTATAGGACGTGTGTTGTCAATTATTTGTAGTA	1020
1021	GTAACATACATCCAATACAGCTGTATGTTCTTTTCTTTTCTAATTGGTGGCACTGG	1080
1081	TATAACCACACATTAAAGTCAGTAGTACATTTTTAAATGAGGGTGGTTTTTTCTTTAAA	1140
1141	ACACATGAACATTGTAAATGTGTTGGAAAGAAGTGTTTAAAGATAATAATTTTGCAAAAT	1200
1201	AAACTATTATAATATATTATATGTGATAAATCTAAATTATGAACATTAGAAATCTGTGG	1260
1261	GGCACATATTTTGTGATGTTGGTTAAAAAATTTAACAGGTCTTTAGCGTTCTAAGATAT	1320
1321	GCAAATGATATCTCTAGTTGTGAATTTGTGATTAAAGTAAACTTTT	

FIG. 1

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C1Gal-T1	MASKSWLNFLTFLCGSAIGFLLSQSFILLSGKVDTPQPNVLHNDPHARHSDDNGQNHLE
C1Gal-T2	MLSES----SSFLKGVMLGSIFCALIT--MLGHIRIGHGNRMHHHEHHHLQAPNK----E
	* * * * *
C1Gal-T1	GQMNFNADSSQHKDENTDIAENLYQKVRILVWMTGPQNLEKKAKHVKATWAQRNKNVLF
C1Gal-T2	DILKISED-----E-R--ME-LSKSFRVYCIILVKPKDVSLWAA-VKETWTKHCKAEF
	* * * * *
C1Gal-T1	MSSEENKDFPAVGLKTKEGRDQLYWKTIKAFQYVHEHYLEDADWFLKADDDTYVILDNLR
C1Gal-T2	FSSENVKVFESINMDTN----DMWLMMRKAYKYAFDKYRDQYNWFFLARPTTFAIENLK
	*** * * * *
C1Gal-T1	WLLSKYDPEEPIYFGRRFKPYVKQGYMSGGAGYVLSKEALKRFVDAFKT-DKCTHSS---
C1Gal-T2	YFLLKKDPSQPFYLGHTIK-SGDLEYVGMGGIVLSVESMKRLNSLLNIPEKPEQGGMI
	* * * * *
C1Gal-T1	--SIEDLALGRMEIMNVEAGDSRDTIGKETFHPFVPEHHLIKGYLPRTFWYWNYNYYPP
C1Gal-T2	WKISEDKQLAVOLKYAGVFAENAEDADGKDVFNKSVGLSIKEAMT-----YHPN
	* * * * *
C1Gal-T1	VEGPGCCSDLAVSFHYVDSTTMYELEYLVYHLRPYGYLYRYQPTLPERILKEISQANKNE
C1Gal-T2	QVVEGCCSDMAVTFNGLTPNQMHVMMYGVYRLRAFGHIFNDALVFLP-----P-NGSDND
	***** * * * *
C1Gal-T1	DTKVKLGNP
C1Gal-T2	-----

FIG. 2

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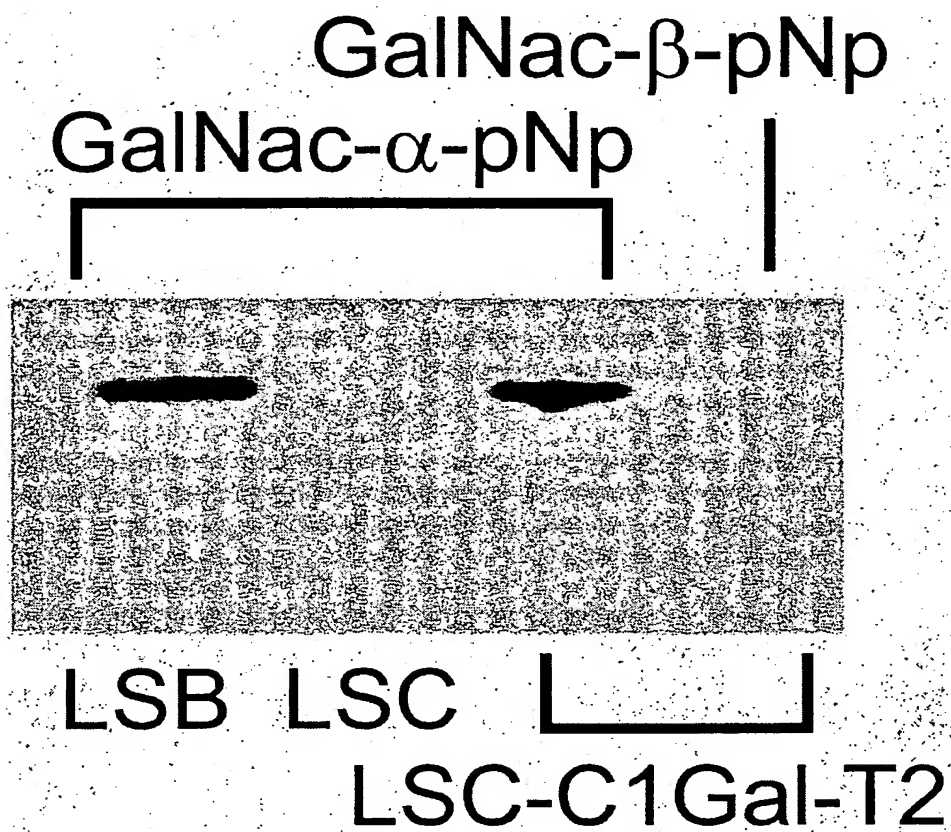


FIG. 3

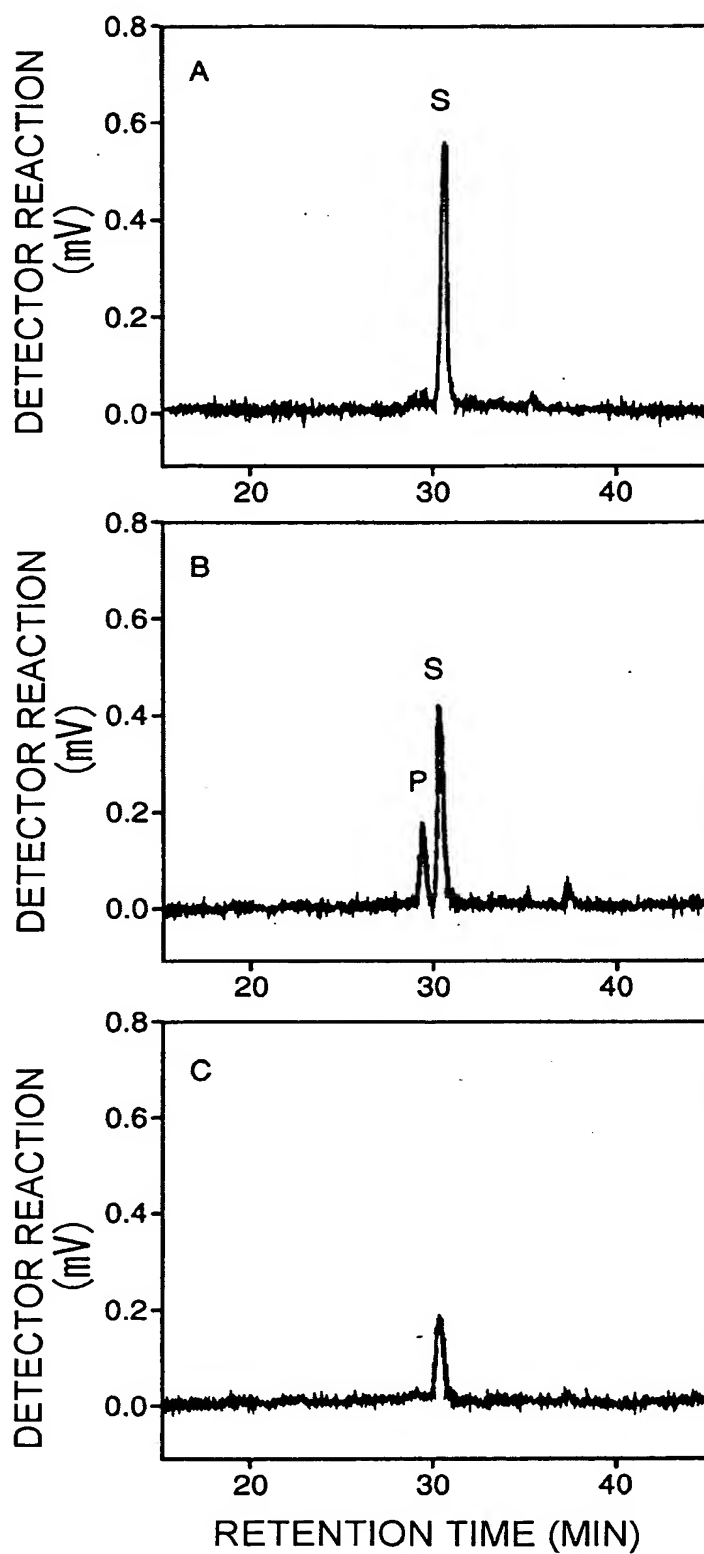


FIG. 4

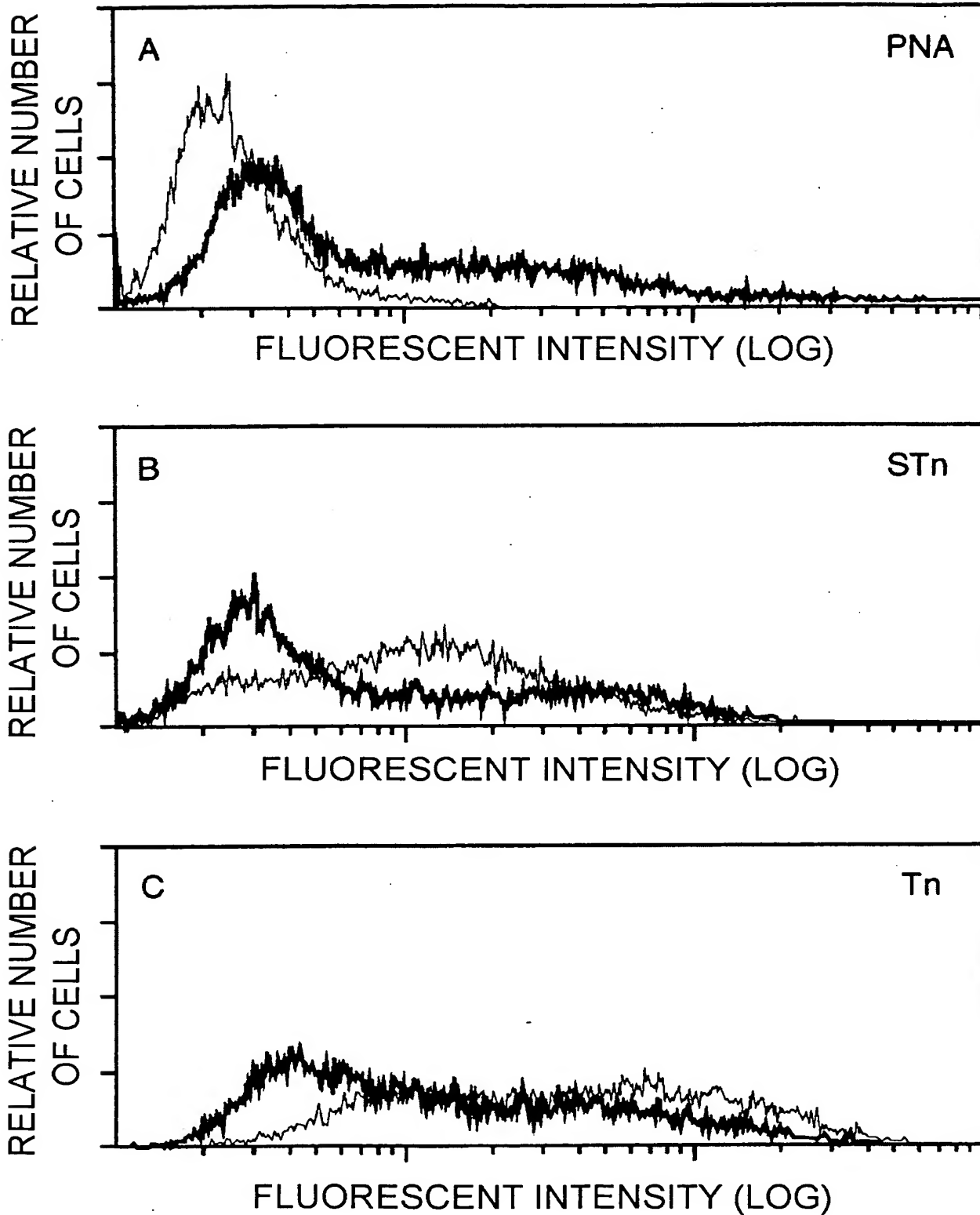


FIG. 5

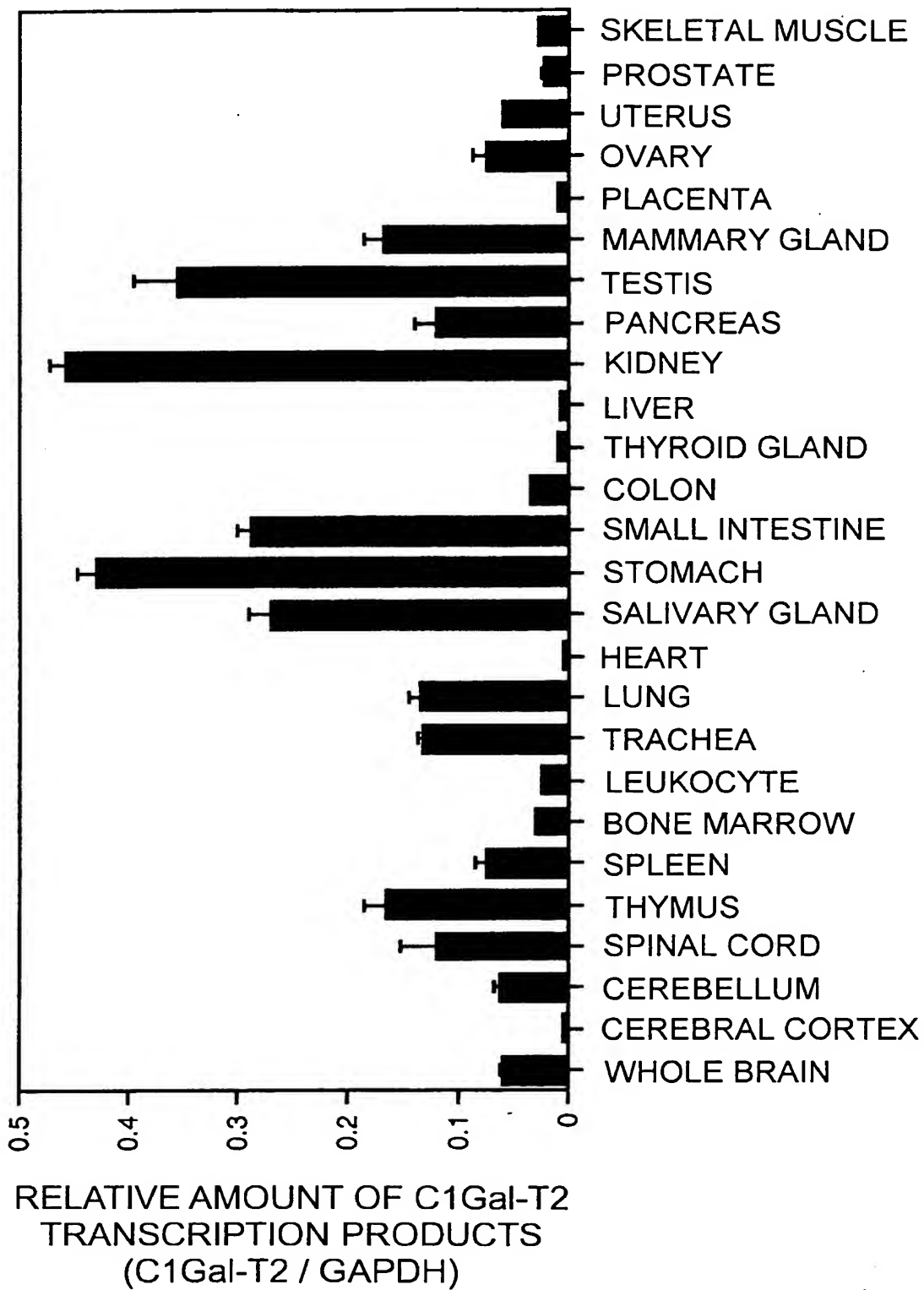


FIG. 6

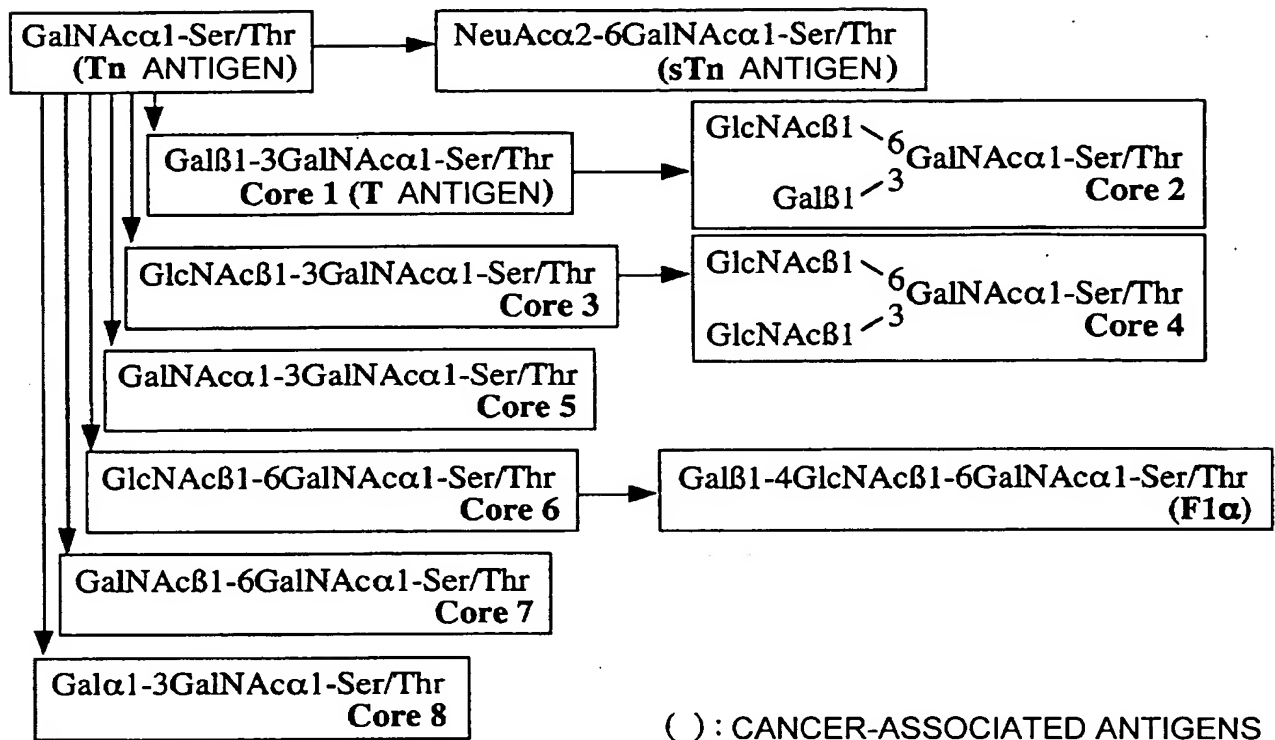
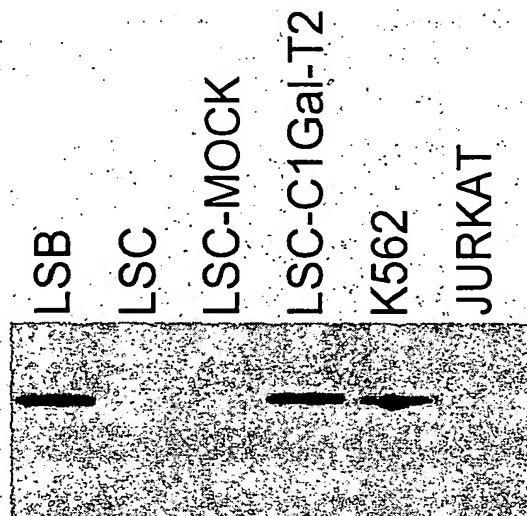


FIG. 7

A



B

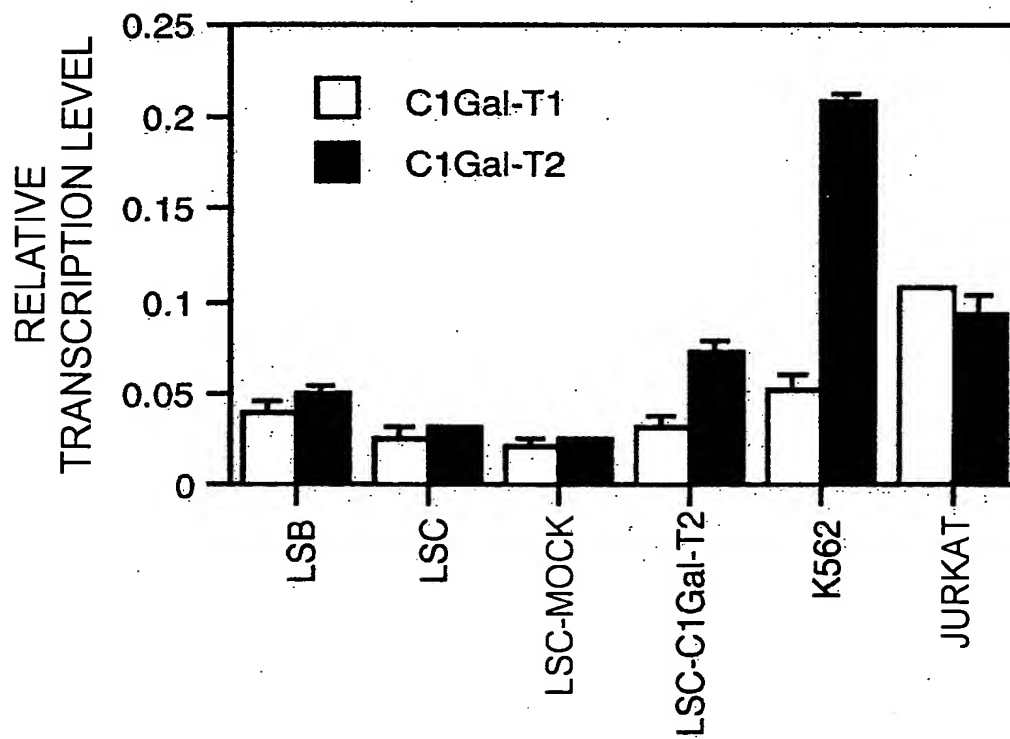
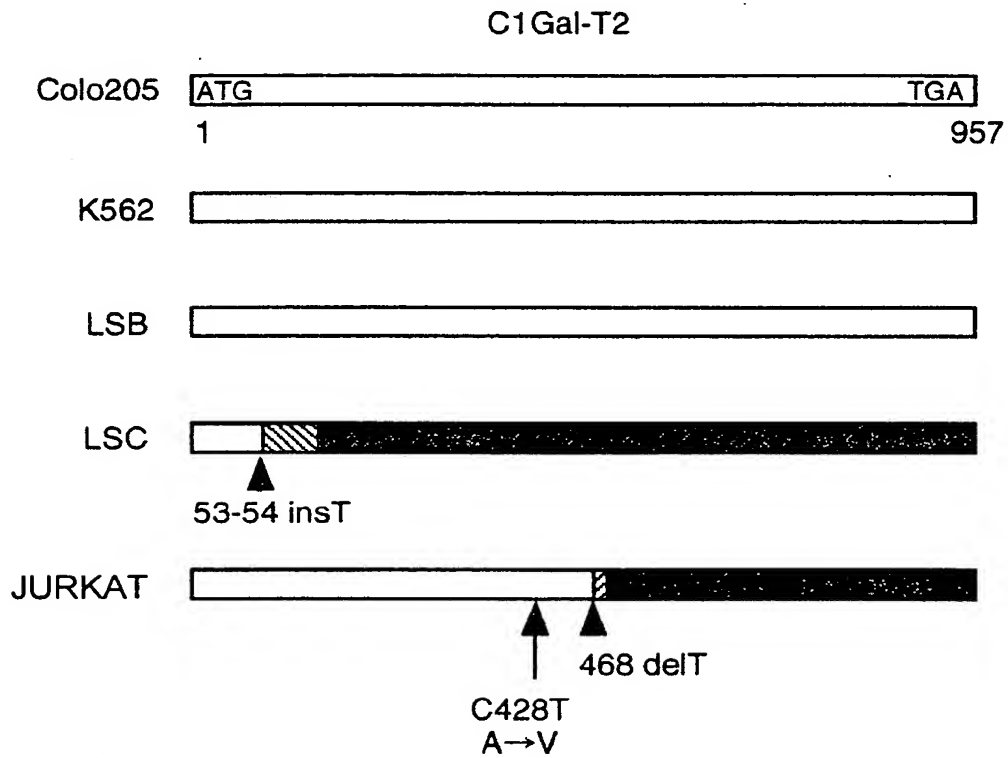


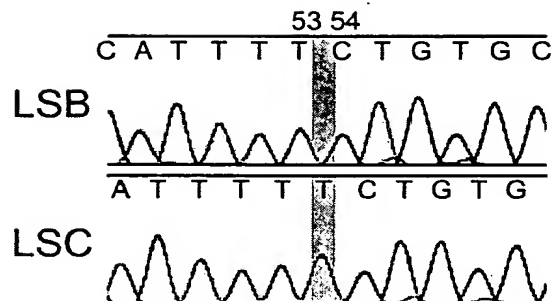
FIG. 8



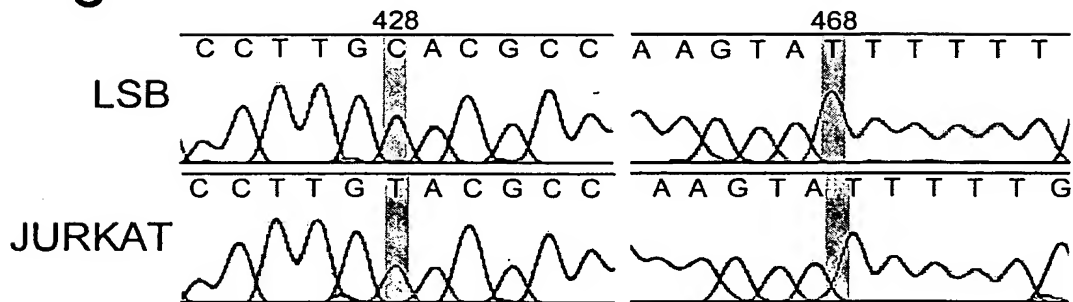
**A**



**B**



**C**



**FIG. 9**

C1Gal-T3	1'	MVSASGTSFFKGMLLGSISWVLITMFGQIHIRHRGQTQDHEHHHLRPPNRNDFLNTSKVI
C1Gal-T2	1"	MLSESSSFLKGVMLGSIFCALITMLGHIRIGHGNRMHHHEHHHLQAPNKEDILKISEDE
		* * * * * * * * * * * * * * * *
C1Gal-T3	61'	LLELSKSIRVFCIIIFGESEDESYWAVLKETWTKHCDKAELYDTKNDNLF---NIESNDRW
C1Gal-T2	60"	RMELSKSFRVYCIILVKPKDVSLWAAVKETWTKHCDKAEFFSSENVKVFESINMDTNDMW
		* * * * * * * * * * * * * * * *
C1Gal-T3	118'	VQMRTAYKYVFEKYGDNYNWFFLALPTTFAVIENLKYLLETRDASQPFYLGHTVIFGDLE
C1Gal-T2	120"	LMMRKAYKYAFDKYRDQYNWFFLARPTTFAI IENLKYLFLKKDPSQPFYLGHTIKSGDLE
		* * * * * * * * * * * * * * * *
C1Gal-T3	178'	YVTVEGGIVLSRELMKRLNRLLDNSETCADQ-SVIWKLSEDKQLAICLKYAGVHAENAED
C1Gal-T2	180"	YVGMEGGIVLSVESMKRLNSLLNIPEKCPEQGGMIWKISEDKQLAVCLKYAGVFAENAED
		* * * * * * * * * * * * * * * *
C1Gal-T3	237'	YEGRDVFNTKPIAQLIEEALSNNPQQVVEGCCDMAITFNGLT PQMEVMMYGLYRLRAF
C1Gal-T2	240"	ADGKDVFNKTSVGLS I KEAMTYHPNQVVEGCCDMAVTFNGLT PNQMHVMMYGVYRLRAF
		* * * * * * * * * * * * * * * *
C1Gal-T3	297'	GHYFNDTLVFLPPVGSEND
C1Gal-T2	300"	GHIFNDALVFLPPNGSDND
		* * * * * * * * * * * * * * *

FIG. 10

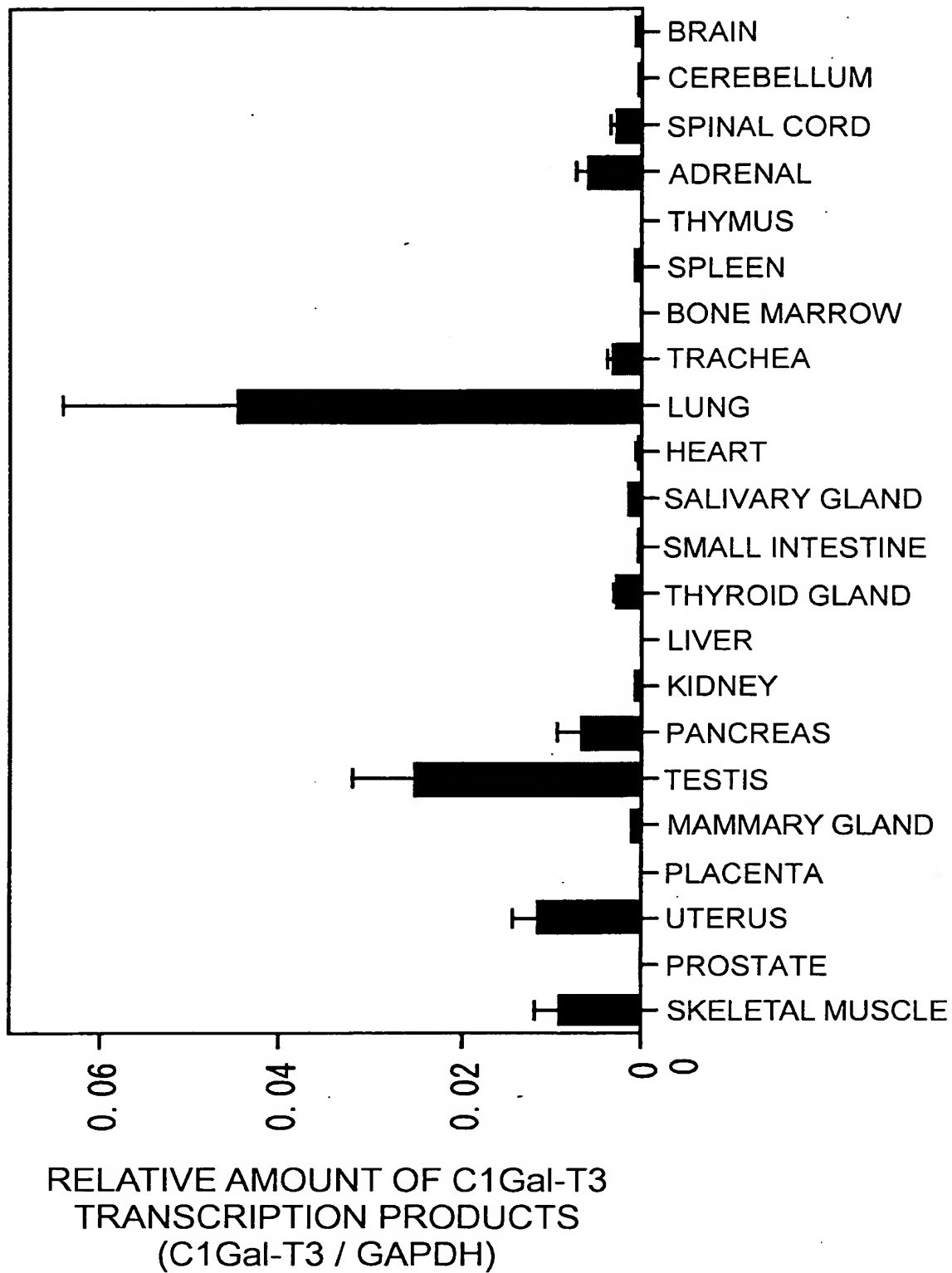


FIG. 11

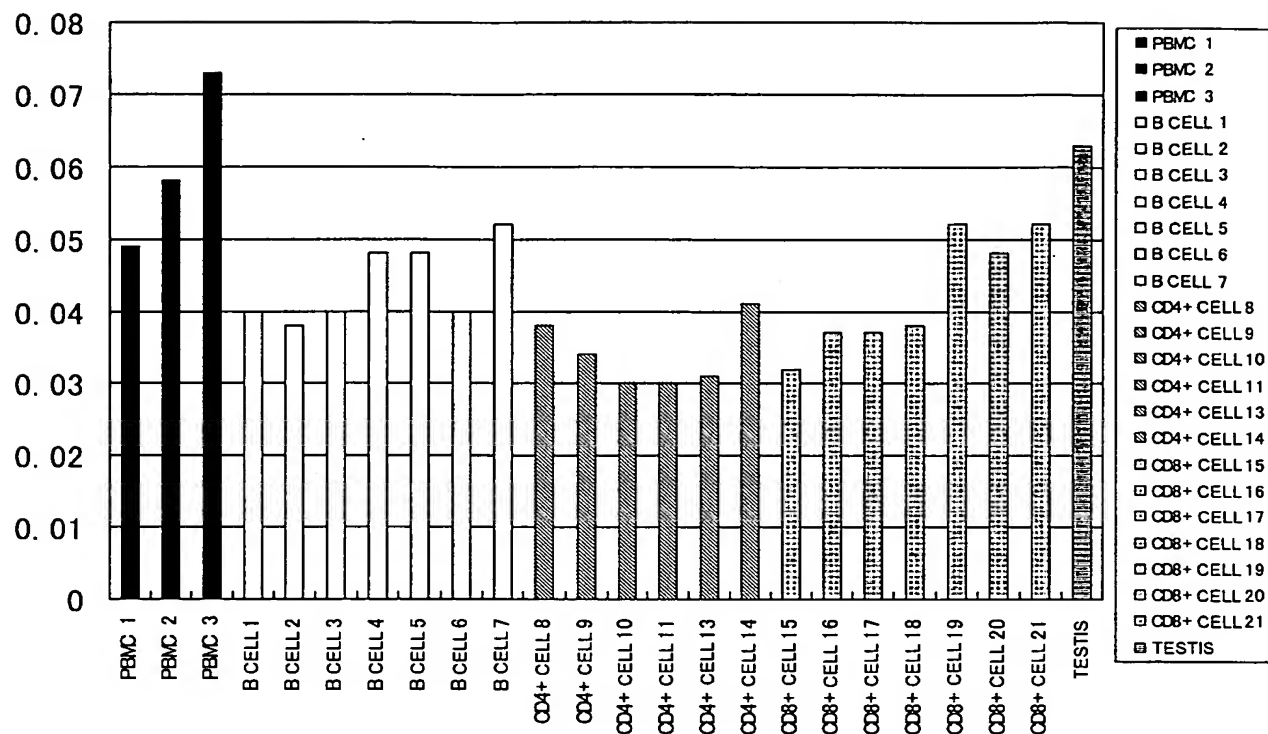


FIG. 12

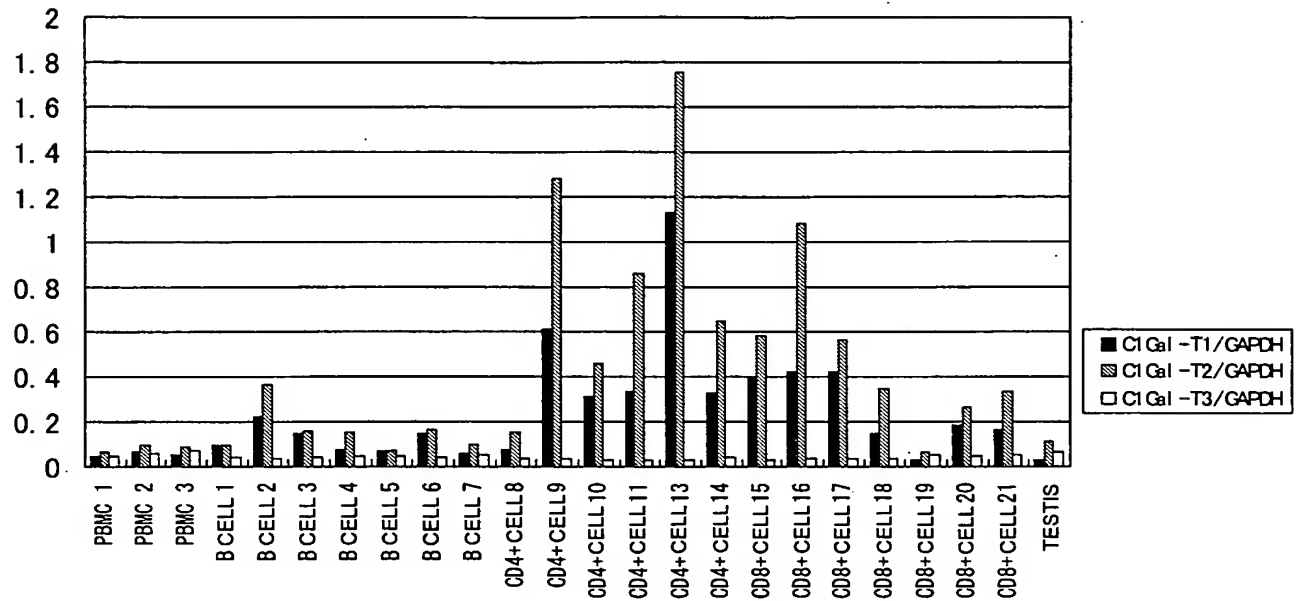


FIG. 13

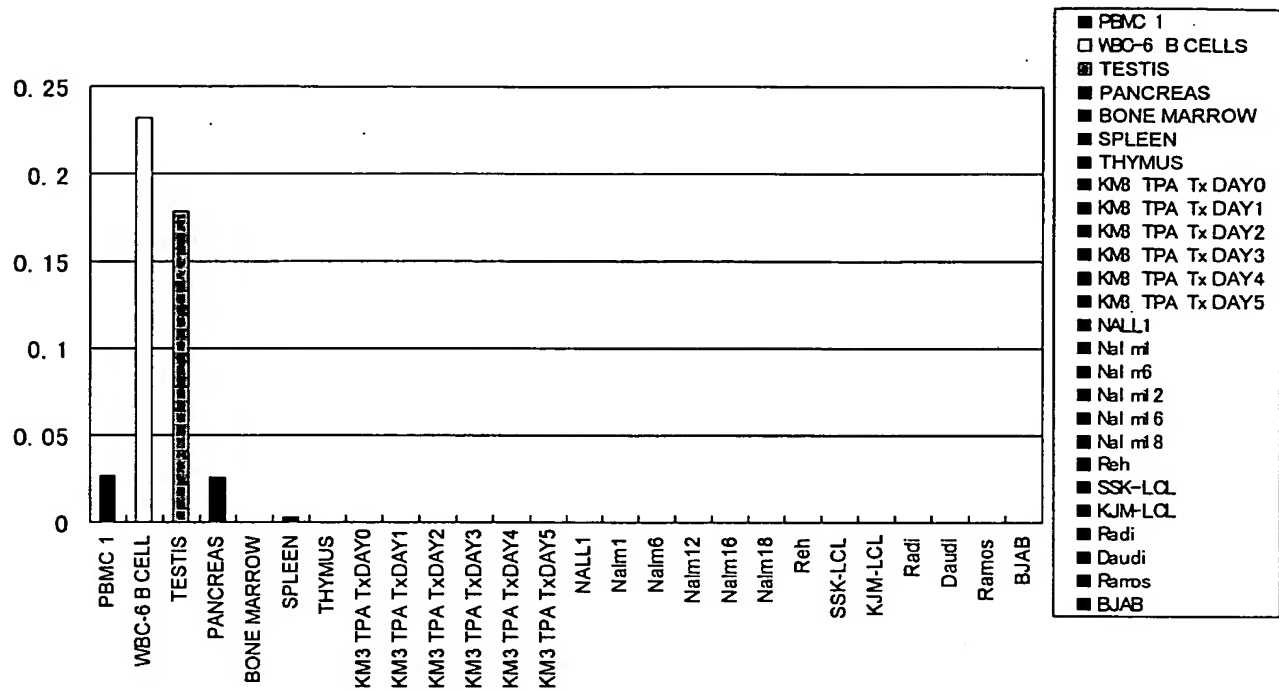


FIG. 14

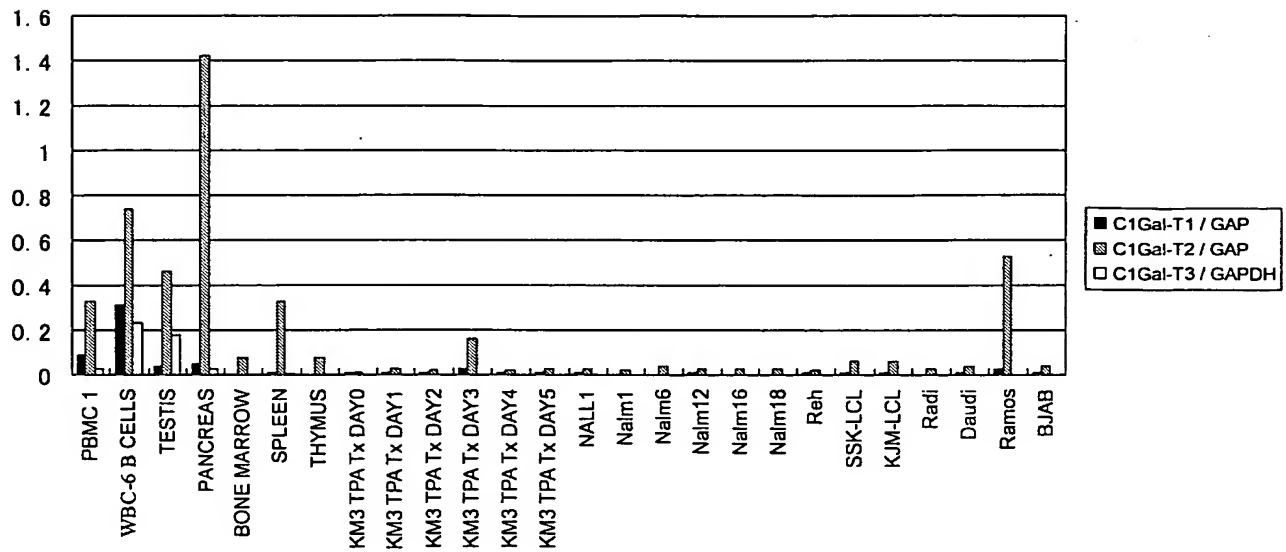


FIG. 15

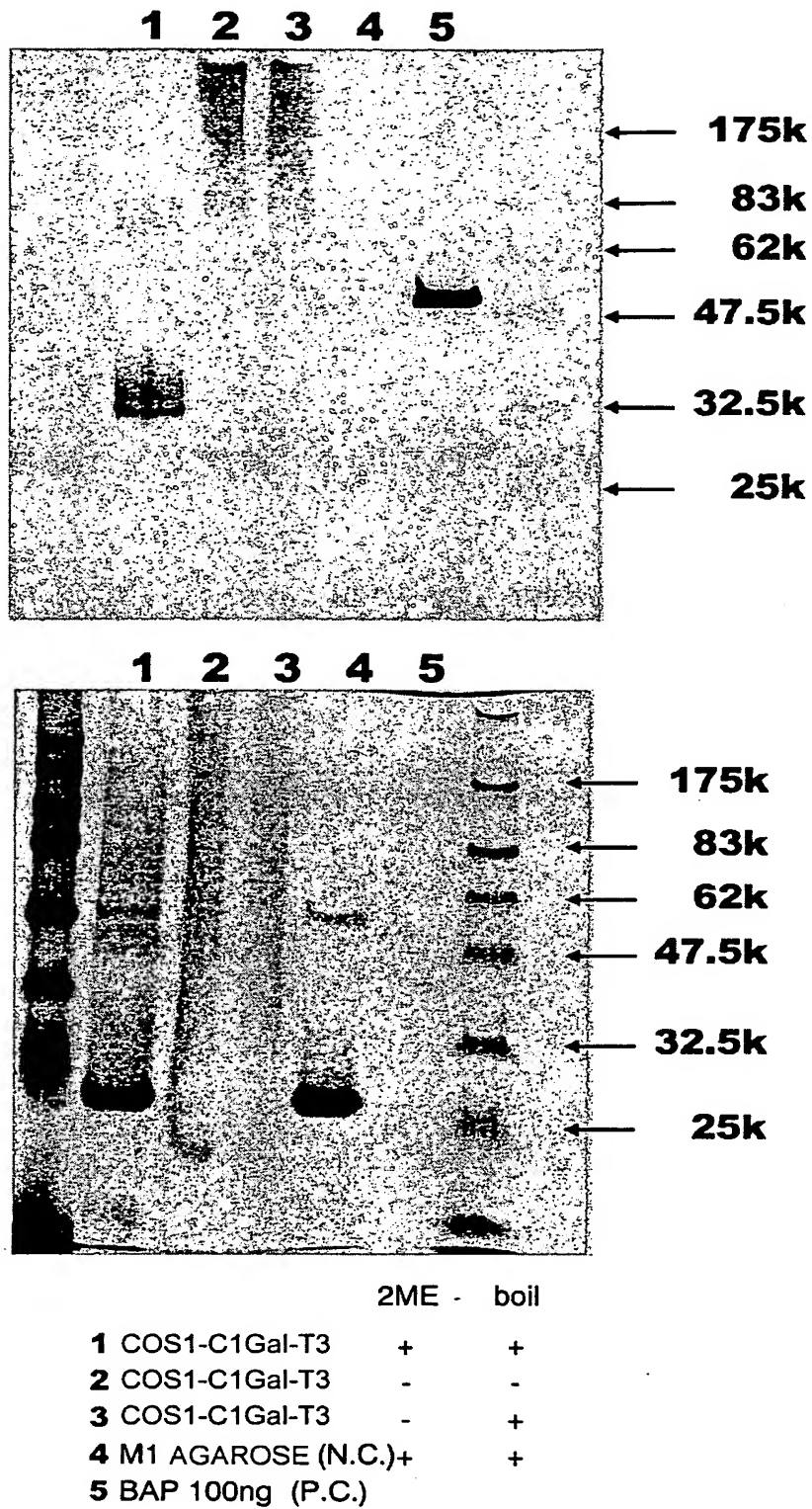


FIG. 16



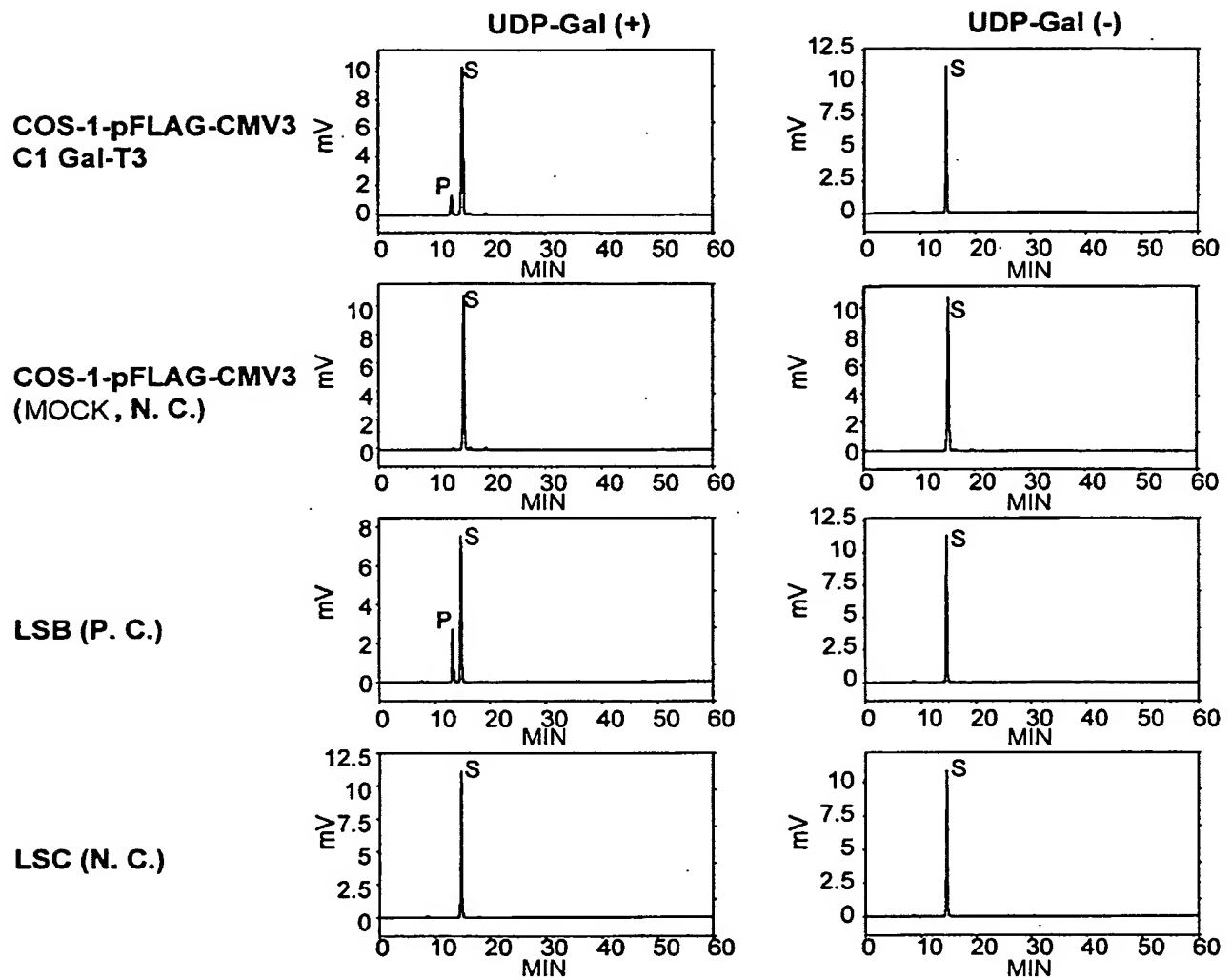


FIG. 17

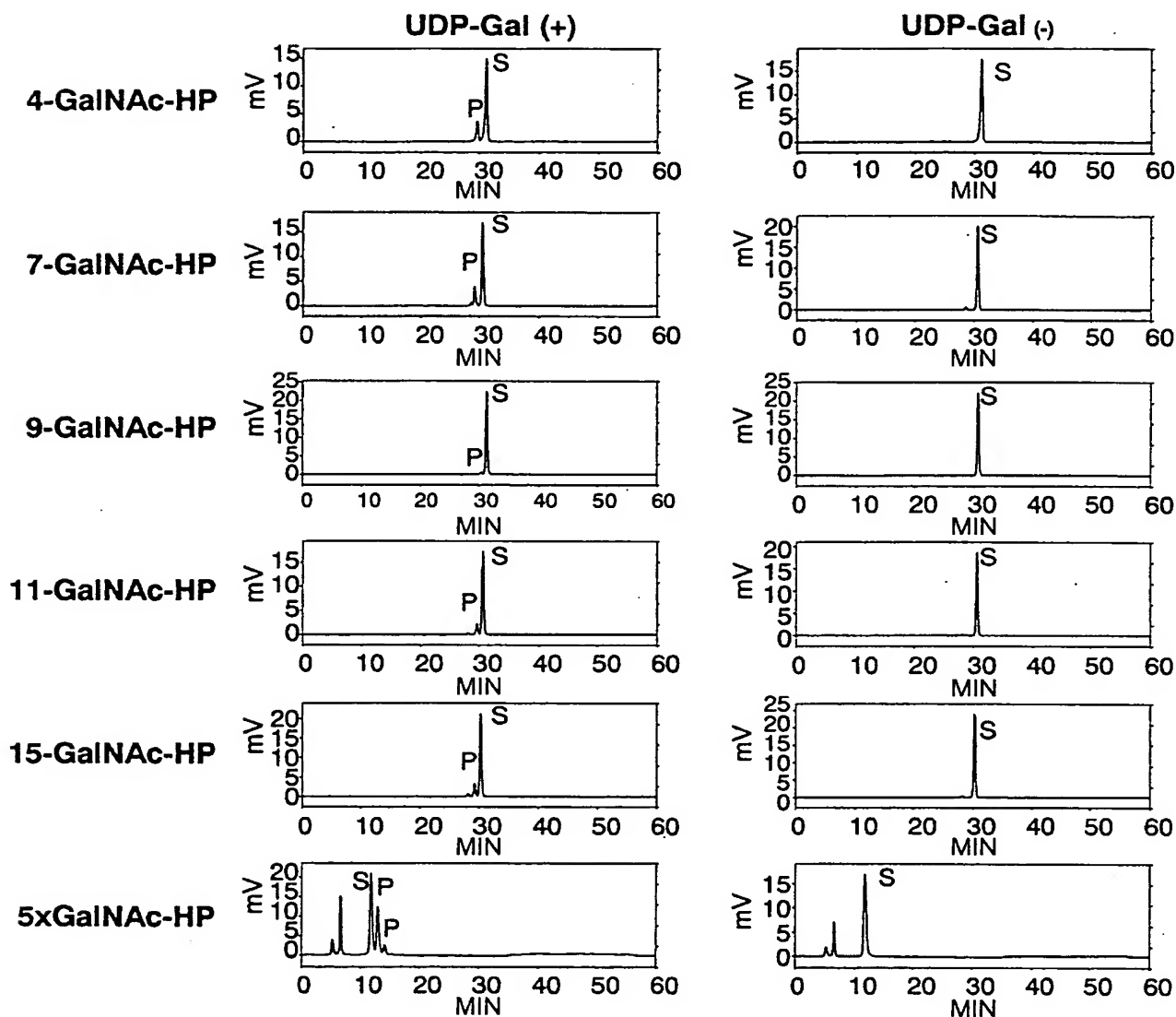
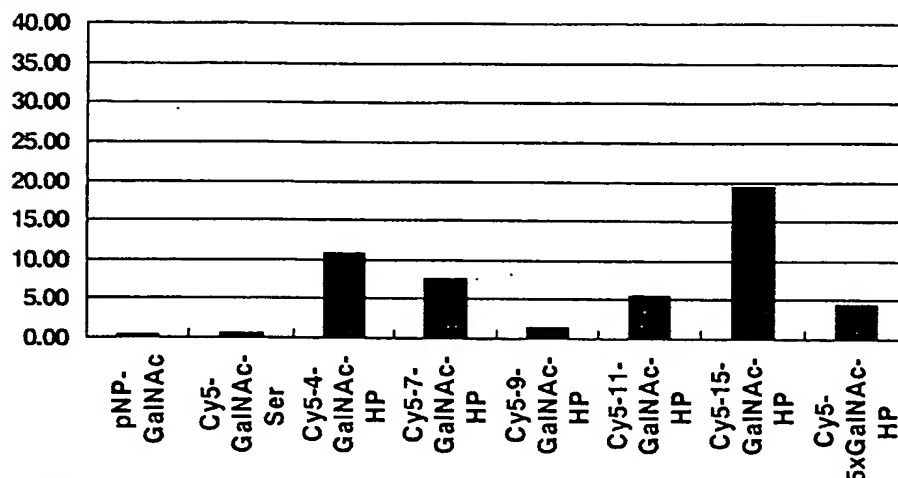
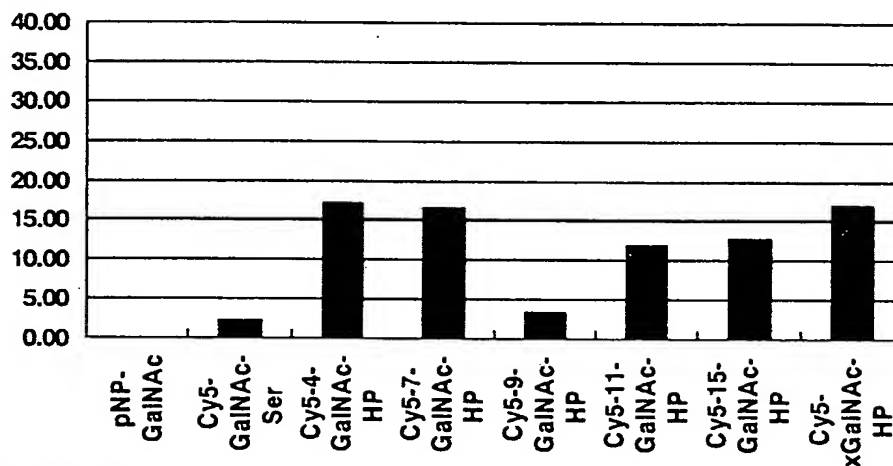


FIG. 18

C1Gal-T1



C1Gal-T2



C1Gal-T3

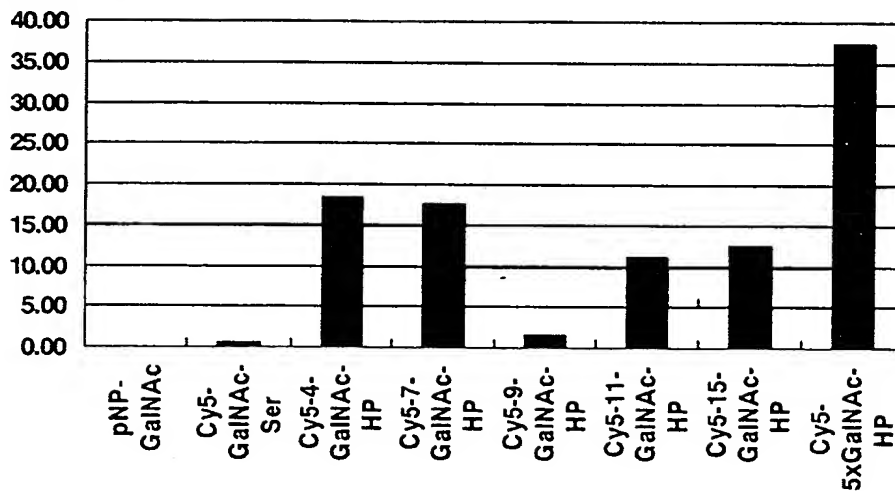
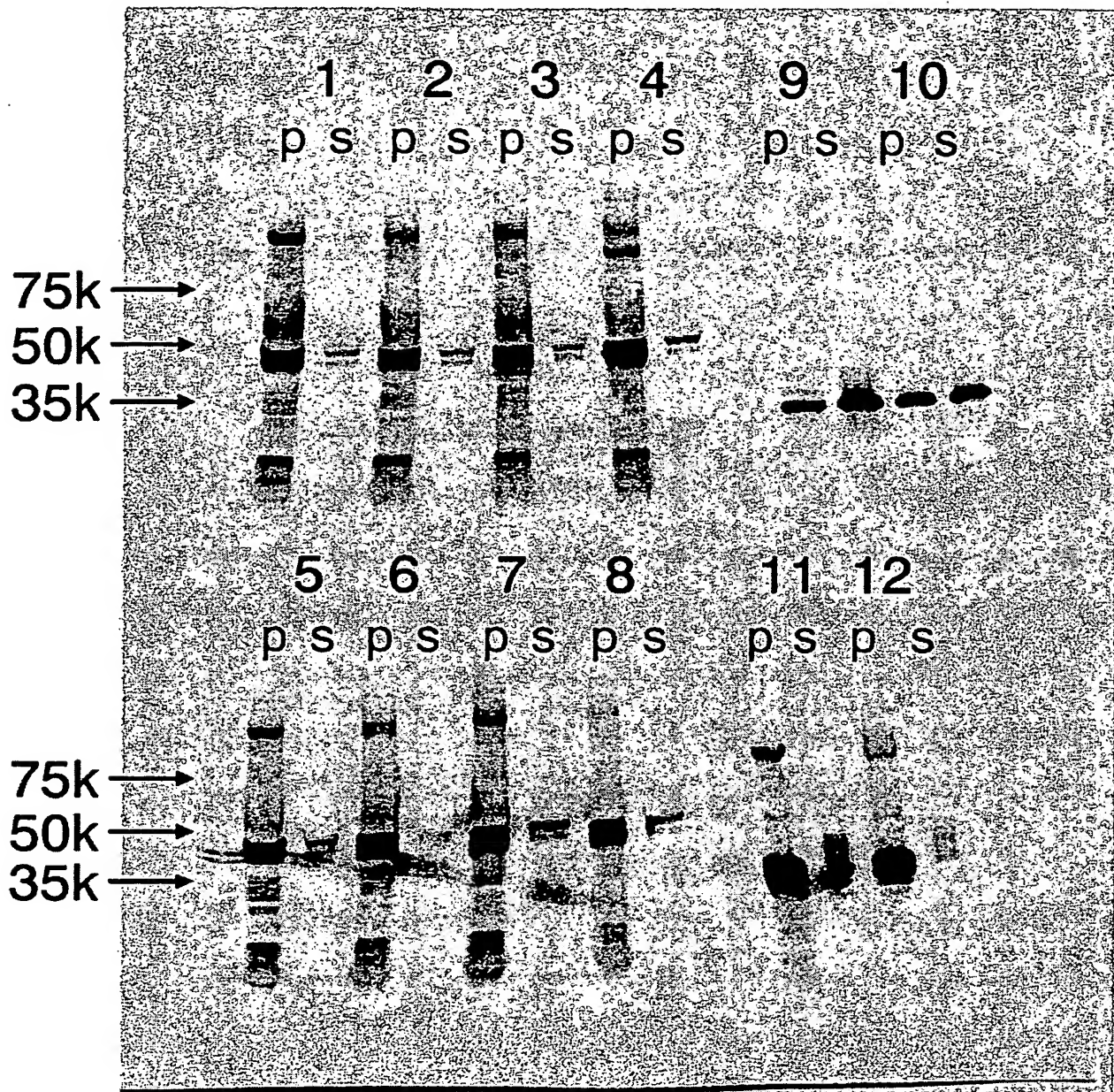


FIG. 19



1000 x dil ANTI-FLAG Ab

FIG. 20

			SUBSTRATE PEAK	PRODUCT PEAK	
1	pFLAG-CMV3-C1Gal-T1	+	pCDNAIHN	—	+++
2	pFLAG-CMV3-C1Gal-T1	+	pCDNAIHN-C1Gal-T1	—	+++
3	pFLAG-CMV3-C1Gal-T1	+	pCDNAIHN-C1Gal-T2	—	+++
4	pFLAG-CMV3-C1Gal-T1	+	pCDNAIHN-C1Gal-T3	—	+++
5	pFLAG-CMV3-C1Gal-T1	+	pCLN	—	+++
6	pFLAG-CMV3-C1Gal-T1	+	pCLN-C1Gal-T1	—	+++
7	pFLAG-CMV3-C1Gal-T1	+	pCLN-C1Gal-T2	—	+++
8	pFLAG-CMV3-C1Gal-T1	+	pCLN-C1Gal-T3	—	+++
9	pFLAG-CMV3-C1Gal-T2	+	pCLN	++	++
10	pFLAG-CMV3-C1Gal-T2	+	pCLN-C1Gal-T1	—	+++
11	pFLAG-CMV3-C1Gal-T3	+	pCLN	+++	—
12	pFLAG-CMV3-C1Gal-T3	+	pCLN-C1Gal-T1	±	+++

FIG. 21